REMARKS

The Examiner is thanked for the performance of a thorough search and for participation in the telephonic interview.

Prior to entry of this response, Claims 1-41 were pending in the application. By this response, Claims 42-47 are added and no claims are canceled. Hence, Claims 1-47 are pending in the application upon entry of this response.

Claims 1, 4-6, and 39 are amended herein.

SUMMARY OF THE REJECTIONS/OBJECTIONS

Claims 39-41 were rejected under 35 U.S.C. §101 as allegedly directed to unpatentable subject matter;

Claims 1, 2, 4, 7-15, 20, and 23-41 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by Alleshouse ("*Alleshouse*"; U.S. Pat. No. 6,655,593);

Claims 3, 5, 6, 16-19, and 21 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Alleshouse*;

Claim 22 was rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Alleshouse* in view of Slaughter et al. ("*Slaughter*"; U.S. Pat. No. 6,643,650).

THE REJECTIONS NOT BASED ON THE PRIOR ART

Claims 39-41 were rejected under 35 U.S.C. §101 as allegedly directed to unpatentable subject matter, for allegedly setting forth functional descriptive material without associated computer-readable medium or hardware in order to produce a useful, concrete, and tangible result.

Claim 39 is amended herein to change the format of the claim, from a "system" to a "computer-readable medium storing instructions". Thus, Claim 39 now recites a valid class of

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patentable subject matter, tangibly embodied on a computer-readable medium, rather than what was construed as merely functional descriptive material. Reconsideration and withdrawal of the rejection of Claims 39-41 under 35 U.S.C. §101 is requested.

THE REJECTIONS BASED ON THE PRIOR ART

Rejection under 35 U.S.C. §102(e)

Claims 1, 2, 4, 7-15, 20, and 23-41 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by *Alleshouse*.

Claim 1 is amended to recite:

while an XML processor performs a validation operation on an XML-based input
stream,
causing said XML processor to generate one or more messages that indicate how
to process specific elements in said XML-based input stream based on
annotations that are associated with said specific elements.

The Office Action interpreted the term "annotations" to mean "instructions for validation." That is not the intended meaning for "annotations" as evidenced by how the term is described in the application (*see*, e.g., paragraphs [0025]-[0027]). Thus, to alleviate this misunderstanding of the meaning of annotations, the amendment to Claim 1 is intended to emphasize the *purpose* of the messages that are generated during an XML validation process, i.e., to indicate **how to process specific elements of the XML stream**. Additionally, this amendment further clarifies the distinction between the **error messages** of *Alleshouse* and the messages of Claim 1, based on the purpose of the messages of Claim 1 and the **annotation definitions** on which these messages are based.

OVERVIEW OF EMBODIMENTS

Applicants acknowledge that Claim 1 is not verbose; however it does capture in clear language innovative features of the embodiment of the invention that it characterizes. It is felt that reviewing what embodiments of the invention are generally about, and some advantages provided thereby, provides enlightening context for understanding the meaning of Claim 1. Thus, the functional overview is repeated, in part and with emphasis added, as follows.

An XML processing model is described, which enables applications that are to use an XML stream to perform metadata-based or other **processing of the XML data during the validation operation, while preserving a streaming processing model**. For example, while an element is being validated, queries can be issued regarding (1) the status of the validation, and (2) any processing that may be required with the element in order to conform the element to requirements of an external application (e.g., **how to process specific elements within the XML stream**). Hence, completely validating the entire XML document or message is not required prior to processing elements and attributes within the document. Furthermore, only a single parse of the input stream is necessary. Techniques that utilize this model provide faster and more efficient processing of XML streams than prior approaches.

Techniques described herein are generally enabled through use of a **validator module that includes a state machine that is able to respond to requests about a validation operation on a parsed XML input stream, while validating the input stream**. The validator exposes public APIs that allow such validation-time requests. Non-limiting examples of requested information may include information about the state of the validation operation, node data types, schema annotation definitions, etc.

Schema annotation definitions direct the type of processing to be performed on nodes at application runtime. Thus, **applications can process a given streamed node according to an associated annotation definition virtually concurrently with validation of the given node by the validator**.

Furthermore, the validator (1) is not required to parse the input stream multiple times, for example, once for a validation operation and once for processing-related materialization of metadata; and (2) is not required to build a resource-intensive in-memory DOM.

Furthermore, processing XML documents to conform with application requirements as soon as possible during validation-time allows for transmission, manipulation and storage of such processed (or "reduced") documents, thereby resulting in faster and more efficient storage, retrieval and transmission of reduced documents as compared with other approaches.

An error message as described in *Alleshouse* indicates that the XML input stream has an error, e.g., that an element in the XML stream does not conform to a corresponding XML schema to which the XML stream is supposed to conform (i.e., does not validate against the corresponding schema). Because the error messages of *Alleshouse* do not **indicate how to process specific elements in the XML stream**, rather they simply **indicate if a validation error occurred** (col. 7, lines 59-63), such error messages are not the same as and do not anticipate the messages generated according to Claim 1.

The printer system disclosed in *Alleshouse* (FIG. 2) depicts what is considered a conventional system for validating and transforming XML data, through use of an XML processor 70 and XSLT processor 74 in a processing pipeline. The XML processor 70, in conjunction with a schema validation module 110 (FIG. 3), validates the data. **After validation** of the XML stream, if validation is successful, a stylesheet is applied by the XSLT processor 74 to transform XML elements and value data (col. 5, lines 40-52) from the XML stream. Significantly, the transformation or other additional processing of the XML stream is not performed until after the XML stream has passed the validation process. By contrast, in the embodiment recited in Claim 1, **the messages that indicate how to process XML elements**

are generated while the XML processor is performing the validation operation. Thus, as mentioned above, completely validating the entire XML input stream is not required prior to further processing elements and attributes within the document, and processing XML documents to conform with application requirements as soon as possible during validation-time allows for faster and more efficient storage, retrieval and transmission of reduced documents as compared with other approaches.

In view of the foregoing, *Alleshouse* does not teach each and every limitation recited in Claim 1 and, therefore, does not anticipate Claim 1. Furthermore, it is not apparent whether or not the XML input stream of *Alleshouse* refers to XML input that is flowing in a "streaming" manner, in which data is transferred such that the data can be processed as a steady and continuous stream (see, e.g., paragraph [0004] of the application). Regardless, the techniques of *Alleshouse* do not preserve the streaming processing model across the validation and transformation stages of XML data processing, as does the embodiment recited in Claim 1, which enables validation-time transformation of XML data.

Claim 13 recites:

while performing a validation operation on an XML-based input stream,
> receiving a request for information about the state of said validation
>> operation; and
> responding to said request by providing said information about said state
>> of said validation operation.

The Office Action relies on citations from *Alleshouse* which describe that (a) if any schema criteria are not met by the data in the XML input stream, the schema validation module will reject it and will return an error message (col. 11, lines 1-10); (b) upon a request for a

schema (col. 7, lines 5-12). First, the requests referred to in the col. 7 citation are **requests to create a barcode label**, which trigger retrieval of a schema from a repository. Such requests are not requests for a schema, as alleged, and more importantly, such requests are clearly not **requests for information about the state of a validation operation** as recited in Claim 13. Nowhere does *Alleshouse* teach or fairly suggest a mechanism for allowing requests for the state of a validation operation on an XML data stream and for responding to such requests (e.g., via the state machine 206 of validator 202 and associated API 210 of FIG. 2) while performing the validation operation. The XML processor of *Alleshouse* may be programmed to generate error messages on its own when an XML input stream has an error, but it is not programmed to **receive and respond to queries about the validation state** of one or more XML elements while the XML data is being validated.

In view of the foregoing, *Alleshouse* does not teach each and every limitation recited in Claim 13 and, therefore, does not anticipate Claim 13. **Claim 39** recites similar subject matter as Claim 13 so the Office Action relies on the same citations from *Alleshouse* for the rejection of Claims 13 and 39. Thus, the discussion presented above in reference to Claim 13 applies to some degree to Claim 39, and Claim 39 is patentable over the references of record for at least the same reasons discussed in reference to Claim 13.

Claims 2, 4, and 7-12 depend from Claim 1; **Claims 14, 15, 20, and 23-38** depend from Claim 13; and **Claims 40 and 41** depend from Claim 39. Therefore, each of these dependent claims is patentable over the *Alleshouse* reference for at least the same reasons as the claim from which it respectively depends. Furthermore, each of these dependent claims includes at least one other limitation that makes it further patentable over the references of record. However, due to the fundamental difference between Claims 1 and 13 and *Alleshouse* discussed above, discussion of these additional differences is unnecessary and is foregone at

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this time. However, the rejection of the dependent claims is collectively traversed, and no statements of official notice, overarching allegations of anticipation, or allegations of well-known features that may be present in the Office Action are stipulated to or admitted as prior art features, and the right to separately argue such features in the future is not disclaimed.

Reconsideration and withdrawal of the rejection of Claims 1, 2, 4, 7-15, 20, and 23-41 under 35 U.S.C. §102(e) is respectfully requested.

Rejection under 35 U.S.C. §103(a)

Claims 3, 5, 6, 16-19, and 21 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Alleshouse*; and

Claim 22 was rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Alleshouse* in view of *Slaughter*.

Claims 3, 5, and 6 depend from Claim 1; and **Claims 16-19, 21, and 22** depend from Claim 13. Therefore, each of these dependent claims is patentable over the cited references of record for at least the same reasons as the claim from which it respectively depends. Furthermore, each of these dependent claims includes at least one other limitation that makes it further patentable over the references of record. However, due to the fundamental difference between Claims 1 and 13 and *Alleshouse* discussed above, discussion of these additional differences is unnecessary and is foregone at this time. However, the rejection of the dependent claims is collectively traversed, and no statements of official notice, overarching allegations of obviousness, or allegations of well-known features that may be present in the Office Action are stipulated to or admitted as prior art features, and the right to separately argue such features in the future is not disclaimed.

Reconsideration and withdrawal of the rejection of Claims 3, 5, 6, 16-19, 21, and 22 under 35 U.S.C. §103(a) is respectfully requested.

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NEW CLAIMS

New Claims 42-47 are added to claim subject matter originally disclosed in the application as filed. Hence, no new matter is introduced in the application by way of these new claims. Claims 42-47 depend from Claim 1 and are patentable over the cited references of record for at least the same reasons as Claim 1. Furthermore, each of Claims 42-47 includes at least one other limitation that makes it further patentable over the references of record. Entry, examination, and allowance of these new claims is requested.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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